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23. The chemiluminescent substrate of claim 4 wherein said chemiluminescent moiety Lumi is an acridinium compound having the following structure:

$$R_{3a}$$
 R_{3a}
 R_{3a}

wherein, R_1 , R_{2a-c} , R_{3a-d} , A^- , M, P, X, Y, and Z are as defined in claim 4; R12, R13, R14 and R15 are the same or different and are selected from the group consisting of hydrogen, -R, hydroxyl, amino, halides, nitro, nitroso, sulfonate, sulfate, phosphonate, $-CO_2H$, cyano (-CN), -SCN, -OR, -SR, -SSR, -C(O)R, and -C(O)NHR.

26. The chemiluminescent substrate of claim 4 wherein said chemiluminescent moiety Lumi is an acridinium compound having the following structure:

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$$R_{3b}$$
 R_{3e}
 R_{3e}
 R_{3e}
 R_{2e}
 R_{2e}

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wherein, R_1 , R_{2a-c} , R_{3a-d} , R_5 , R_7 , A^- , M, and P are as defined in claim 4;

 R_{2d} is as defined for R_{2a-c} and R_{3a-d} ;

 R_{16} and R_{17} are the same or different, and are selected from the group consisting of hydrogen, methyl, alkyl with low molecular weight, and halides.

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